

PESTICIDE REDUCTION STRATEGIES FOR AUSTRALIAN COMMUNITIES

(August 2004)

INTRODUCTION TO HUMAN AND OTHER EFFECTS OF PESTICIDES

Pesticides are toxins affecting many human body organs (including skin) and their functions. They cause disorders of immune systems, reduce cell energy output, and cause glands to swell and harden. Pesticides damage human brains and intellect, and also affect nerve conduction. Some cause brain tumours in humans only a few months or a few years old, or cause them to be born with no eye sockets/eyes. So called “safe doses” are being lowered constantly. Accumulation of many small doses below medical test detection is seen to be harmful. Many chemicals can be diagnosed by a well-recognised “footprint” in humans.

Raymond Singer, Doctor of Environmental Science, discusses this in the “Neurotoxicity Guidebook” written in 1988 for safety professionals, physicians, risk analysers and government regulators. (Published Van Nostrand Reinhold N.Y.) The book was based on his post-doctoral study of low dose neurotoxicity symptoms and testing procedures. At these levels he found these people suffered neurotoxic disabilities as follows:

- “1. Personality changes.
 - a. Irritability.
 - b. Social withdrawal.
 - c. Amotivation (disturbance of executive function).
2. Mental changes.
 - a. Problems with memory for recent events.
 - b. Concentration difficulties.
 - c. Mental slowness.
3. Sleep disturbance.
4. Chronic fatigue.
5. Headache.
6. Sexual dysfunction.
7. Numbness in the hands and feet (depends on the substance).
8. Recognition that there has been a loss of mental function.”

None of this information has yet reached medical doctor training in W.A.

- In 1999 Dr John Whitehall, Neonate Paediatrician, Townsville Australia, found 66% of newborn babies had five to six neurotoxic pesticides in their meconium. (Meconium is the first bowel motion formed in the womb).

This shows the babies absorbed the pesticides directly from the mother and via the pesticide contaminated amniotic fluid. The mother's milk will also contain pesticides because all fluids leaving the body are vehicles to excrete toxins. Blood is not leaving the body so is a poor indicator of toxicity. Urine is excellent for testing toxicity but is not tested by most Australian doctors and mis-diagnosis of pesticide poisoning occurs in most Australians affected by chemicals.

- Australian wild kangaroo meat showed significant contamination by organophosphate pesticides in a 1994 Australian Market Basket Survey. Publication ceased due to withdrawal of funding by the Federal Government.
- Both polar ice caps are contaminated by pesticides. All animals in the northern parts of Canada, Greenland, Norway and Russia contain significant levels of pesticides.
- December 2003. Earthwatch find frogs dying in all countries at alarming rates from many types of viruses, and do not know what has so drastically reduced their immunity. In Australia it is worse in coastal regions where frogs normally flourish due to greatest rainfall and insect breeding.
- The word "pesticide" used throughout this information should be understood to include any chemical produced specifically to kill any plant or fungus, or any living creature, however it is applied.

HOW PESTICIDES TRAVEL

Pesticide spray drift is a major cause of cumulative low dose exposure causing severe illness in humans. Warning signs do not stop spray drift. The arbitrary figure of a radius of 500m for a "no spray zone" has no basis in science or experience. In an airflow of 3kph, spray drift can enter a property 500m away in 10 minutes or less, penetrating buildings and vehicles, destroying bushes, trees and plants haphazardly.

This is because air moves in rolling waves below the surface like the sea does. Sea waves can and do wrap up objects and carry them more rapidly inside waves until they meet an obstruction that slows them down, eg a reef. Flotsam is deposited on both sides of the reef.

Air carrying pesticides may drift to cause sticky residue on the windows of a building closest to the source of the pesticides. The obstruction of the airwaves causes them to slow down and surround the building, concentrating in the down-wind area away from the side of the airflow direction.

No matter if it is vehicle exhaust or pesticide, the results are the same.

Simultaneously, contaminated air enters windows and doors on the facing side. Buildings are not usually built to be airtight.

Variations in height and reach of pesticide drift depend on air speed, temperature, humidity, air speed above the height of the spray drift that may carry it further, and ground temperature and terrain.

10kms radius of "no spray zone" is considered a reasonable diameter distance by doctors experienced in the field. Nevertheless, farmers can and do claim damage from spray drift 15-20kms away, causing holes in their crops and death to farm animals. The holes in crops are caused by the wrapping up and dumping of pesticides by airwaves.

RELEVANT LAWS

Agricultural and Veterinary Chemicals Code No. 47, 1994. (Still current).

NB *NRA is now Australian Pesticides and Veterinary Medicines Authority (APVMA).*

Certain statements prohibited.

89.(1) *A person must not, without reasonable excuse, do, or cause or permit to be done, any of the following:*

- (a) publish or communicate any false or misleading information about a chemical product;*
- (b) expressly or impliedly claim that the APVMA recommends the use of a chemical product;*
- (c) expressly or impliedly claim that the APVMA guarantees, warrants or assures the safety or efficacy of a chemical product;*
- (d) expressly or impliedly claim that the use of a chemical product is recommended:*
 - (i) by the Commonwealth, a State or a Territory; or*
 - (ii) by an authority of the Commonwealth, a State or a Territory; or*
 - (iii) by an officer or employee of, or of an authority of, the Commonwealth, a State or a Territory;*
- (e) expressly or impliedly make a claim (however the claim is stated), without any qualification, or with a qualification that, in the APVMA's opinion is unjustified, to the effect that a chemical product is natural, organic, safe, harmless, non-toxic, non-poisonous, non-injurious or environment friendly.*

Regulation 12 Health Pesticide Regulations 1956. (Still current).

“No person in an advertisement shall make any claim or statement that a pesticide is non-poisonous or harmless to humans, or which is false or misleading in any particular concerning the pesticide or its constituents”

SIX WAYS TO REDUCE RISK

- A.** Eliminate the hazard.
- B.** Substitution—use a safer alternative.
- C.** Isolation—separate the people from the hazard.
- D.** Improved technological methods.
- E.** Administration—change work practices, reorganise the work.
- F.** Add personal protection.

Government of Western Australia Consumer and Employment Protection (2003)

- Can any of the above be used to protect the public from pesticide spray drift?

DUTY OF CARE

1. Put in place *Duty of Care* for the use of pesticides. This means action should be taken to avoid injury to the general public as well as workers. These are examples of the precautionary manner in which Councils address Duty of Care:
 - Traffic lights outside schools to allow children to cross safely.
 - Reverse beepers on machines used for construction/maintenance.
 - Requirement for people to fence their swimming pools.
 - Taking action to reduce pesticide use in every situation to avoid injuries to people passing through the area treated and to minimise environmental hazards from spray drift. No spraying in urban areas

NB *There is also another risk with all the examples above—the possibility of litigation by the public for harmful results of neglecting Duty of Care.*

DUTY OF CARE FOR USE OF PESTICIDES

1. Inform the Public

Inform the public through newspapers, two weeks before use, of the details of use of pesticides in the area including: dates and times of spraying, name of product, list of all ingredients in the named product, the target weed and the withholding period.

2. **Notices placed two weeks before pesticide use as above at the areas to be targeted**
3. **Notices during pesticide use at the targeted areas**
4. **Notices at the targeted area placed for two weeks after pesticide use or more if the withholding period is more than two weeks.**
5. **General Public List**

Set up a general public list of people who require no pesticides to be used near them to protect their family's health, because they are commercial growers not using pesticides themselves or gardeners growing their own non-pesticide foods etc.

Provide appropriate no spray zones.

6. Public List for Sensitive People

Set up a public list for people who are sensitive to pesticides, with breathing problems, heart disease and multiple chemical sensitivities. These people to be notified as long as practical before pesticide use commences (minimum of two weeks).

Provide appropriate no spray zones.

7. “No Pesticide Zones”

Council staff and contractors must honour “No Pesticide Zones” put in place by Council. Council must check regularly that the zones are in place and are protecting those at risk.

8. Occupational Health and Safety for Workers in Council, and All Contractors

Councils must insist on required precautions being in place. Contractors must meet the Council's safety standards in O.H.&S. Councils must monitor this from time to time.

9. Pesticide Reduction Programmes

In order to reduce the use of pesticides, accurate data is essential on what is being used before the programme begins, and what is being used as the reduction programme moves on.

10. Annual Audits

Annual audits necessary are: the name and quantity of each pesticide used and its cost, where it is used, how it is used (i.e. sprays, wipes, back pack dribble) wind speeds etc. Effectiveness and adverse human or environmental effects should be recorded and included in the audit.

11. Changes in Application

Changes in application eg:

- a. Wick application on tall weeds and grasses to avoid bottom layer foliage and soil contamination (hand-held).
- b. "Weed bug" rotary pesticide wiper (hand-held, small machine)
- c. Plain hot water/steam.
- d. Edge cutters and whipper snippers, other mechanical means.

12. Changes in Vegetation Plantings

Change vegetation plantings to plants that need less care. (Local Environmental Groups can advise).

13. Urban and Rural Spraying

No urban spraying of roadsides, footpaths, median strips etc, and no spraying of any parks and ovals.

No spraying in urban or rural areas near schools, hospitals, nursing homes, day care premises or where it affects sensitive groups i.e. those who are ill, the elderly, children, all women, especially those of child bearing age, men without protective gear.

14. Management of Audits and New Methods

Usual categories of for example:

Roadside Management—look for alternative weed management. Landcare groups are involved in this already. Public environmental groups have knowledge.

15. Sustainability Programmes

- International Committee of Local Government Initiatives. They use "Agenda 21" from the Rio Conference, with the "Precautionary Principle".
- The NSW government has a state initiative for local governments and shires—The Pesticide Application Review Taskforce by NSW Government.
This is a state initiative for local governments and shire associations.

16. Triple Bottom Line

If councils want to reduce the use of pesticides and ensure effectiveness, they need to know what is going on now and monitor ECONOMIC, SOCIAL and ENVIRONMENTAL changes. Without such monitoring processes the public liability risks are considerable.

17. Freedom of Information

Councils have an obligation and responsibility to inform the public of changes and data.

SOE or “State of Environment” reporting should be in Annual Reports and in the Five Year Plans.

Any questions or requests by the public should be answered so that ideas can flow both ways.

18. Control Trials

Control trials can be put in place and results and costs made available for the public.

19. Fast Change

Getting rid of spraying to avoid risk can effect fast change.

If councils are not actively engaging the public in dialogue, they may be below standard.

20. Data Collection

Data is a Performance Indicator.

Is the data on changes in pesticide use easy for the public to interpret and see the changes?

For example:

- Looking after roads etc and protecting biodiversity must be visible.
- The breakdown of herbicide use must be visible.
- Can the public compare what was happening at the beginning of the year and at the end? What is happening now?
- Is slashing or wiping saving money?
- If it is, can it be used for cleaner and greener projects?

21. Signage

NSW councils have found permanent signs suitable.

- Permanent signs on certain rural roads, on parks, ovals and bush areas that are routinely sprayed. The signs warn the area is sprayed “as shown” on a local map.
- An area on the board is designated for required changing information eg dates, times, names and all constituents of the pesticides, target weeds or insects, animal baits etc., and withholding times.
- Flagged off areas are useful during spraying.
- Orange plastic “hats” can be used to warn of spraying.
- Costs of signage and Extended Producer Responsibility (EPR) need to be factored into pesticide methods. They are essential.

22. Extended Producer Responsibility (EPR)

EPR includes collection and recycling of products and containers.

EPR extends the responsibility of producers for the products they make to the post-consumer stage. It includes responsibility for the collection and recycling of products and containers, transferring costs from taxpayers and councils to producers and consumers. The successful operation of EPR schemes to reduce pesticide waste depends on involvement from local councils and the public.

Cooperative arrangements are in place among farmers, governments and industry.

- “DrumMuster” is EPR, for those using agricultural chemicals, eg farmers, Local Governments, pesticide control operators etc. It is funded by a levy on the sale of the product per litre/ per kg. For your State contacts:

<http://www.drummuster.com.au> or (02) 6230 6712.

- “ChemClear” is EPR, run and funded by the chemical industry to collect chemical containers with 200ml and above of residual products. For current State arrangements:

<http://www.chemclear.com.au> or 1800 008 182.

- Nationally registered training organisation “ChemCert” courses are available throughout regional and rural Australia for anyone using farm chemicals:

<http://www.chemcert.org.au> or (02) 6161 0477

Note: Great care should be taken in collection of even triple-rinsed containers. Inhalation from evaporation of volatile chemicals can occur. Experience also shows secondary injuries; short- and long-term effects from pesticide building up in dry soils. Surface water or rains can release this concentrated mixed build-up that has been unable to be broken down by bacterial action in the dry periods.

Subsequent contaminated evaporating moisture can be absorbed through feet, any skin, mucous membranes (including ears) and by inhalation.

Quite serious problems can include changes in brain function, short- or long-term. Brain toxins include solvents and surfactants as well as the active components of pesticides, or formaldehyde.

Pesticides, and solvents especially, cause quite quick changes including irregular heart beats, breathing difficulties, disorientation, irritability, sleeplessness or violence. Use of full body and head cover protection, and an applicable respirator would be sensible. A mobile phone could bring assistance with a pre-programmed emergency ‘phone number. Dust also carries chemical contaminants.

This document is posted at <http://www.oztoxics/ntn/reducepesticides.html>

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